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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/457,724	12/10/1999	JOE CARLIN	ARGO.0001	7995

7590 03/20/2003

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FALLS CHURCH, VA 22042

EXAMINER

CORRIELUS, JEAN B

ART UNIT	PAPER NUMBER
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2631

2

DATE MAILED: 03/20/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

81

Office Action Summary

Application No.

09/457,724

Applicant(s)

CARLIN ET AL.

Examiner

Jean B Corielus

Art Unit

2631

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 December 1999.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-61 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 11-50, 52-54 and 57-61 is/are allowed.
- 6) ☒ Claim(s) 1, 3, 5, 8 and 9 is/are rejected.
- 7) ☒ Claim(s) 2, 4, 6, 7, 10, 51, 55 and 56 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Art Unit: 2631

DETAILED ACTION

Specification

1. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

2. Claims 5, 14, 19, 21, 22, 28 and 39 are objected to because of the following informalities: claim 5, line 2, "FFT channelizers" should be "channelizing module"; lines 2 and 4, "modules" should be "module" so as to be consistent with antecedent in claim 1; line 3, "complex data streams" should be replaced by "data" so as to be consistent with antecedent in line 1. Claim 14, line 2, before storing, "subset of adjacent spectral components includes" needs to be inserted. Claim 19, line 2, "processing" needs to be replaced by "channelizing processes"; line 3, "includes" needs to be replaced by "including". Claim 21, line 2, "magnitude" needs to be deleted so as to be consistent with antecedent in claim 17. The same comment applies to claim 22, line 2. Claim 28, line 7, "synthesis filtered" needs to be replaced by "complex" so as to be consistent with antecedent in line 6; line 7, "signal" needs to be replaced by "data". Claim 39, line 2, "channelizers" needs to be replaced by "channelizing"; lines 2 and 4, "modules" needs to

Art Unit: 2631

be replaced by "module"; line 3, "complex data streams" needs to be replaced by "data" so as to be consistent with antecedent in line 1. Appropriate correction is required.

3. Claim 51 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The limitations recited in claim 51 has been substantially recited in claim 49.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hamdy et al US Patent No. 6,229,998.

Hamdy et al discloses a system (figs. 15&16) comprising a receiver 1502 for receiving a wideband signal; element 1504 functionally equivalent to the claimed sub-band conversion module for converting the wideband signal into a plurality of sub-band signals; a channeling

Art Unit: 2631

module 1606 for Fast Fourier Transform channeling said plurality of subband signals into a respective plurality of complex spectral components and processing module (1608, 1610 and 1612) for processing said plurality of complex spectral components, including means (1610 and 1612) for determining the presence of at least a signal of interest based on the multiple time averaging analysis (using element 1610) of said plurality of complex spectral components.

However, Hamdy et al does not explicitly teach the use of high speed data router as a means for digitally routing respective plurality of module data between the modules. However, the use of high speed data router is old and well known in the art. Given that, it would have been obvious to one skill in the art at the time of the invention to interconnect each module using such a device in order to achieve efficient utilization of system resources.

6. Claims 3, 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hamdy et al US Patent No. 6,229,998 in view of Gardner et al US patent No. 5,260,968.

As applied to claims 1 and 5 above, Hamdy et al discloses every feature of the claimed invention but does not explicitly teach the use of a plurality of FFT channelizers operatively connected to receive corresponding ones of said subband signal and thereby generate a corresponding plurality of complex spectral components, and a data router port for routing said plurality of complex spectral components to said processing module.

In the same field of endeavor, Gardner et al discloses a plurality of FFT channelizers 38 operatively connected to receive corresponding ones of said subband signal and thereby generate

Art Unit: 2631

a corresponding plurality of complex spectral components and a data router port 40 for routing said plurality of complex spectral components to said processing module 42. It would have been obvious to one skill in the art at the time of the invention to incorporate such a teaching in Hamdy et al in order to enhance system processing speed.

As per claims 8 and 9 it would have been obvious to one skill in the art at the time of the invention to include Hyperchannelizing means having a plurality of FFT engines in each of the FFT channelizer for the same reason provided in reference to claim 3 above.

Allowable Subject Matter

7. Claims 2, 4, 6, 7 and 10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. In addition, the claim(s) needs to be amended if necessary to overcome any objection sets forth above.

8. Claim 55 and 56 would be allowable if amended to change the dependency of claim 55 to 49.

9. Claims 11-50, 52-54 and 57-61 are allowed. Note that, the claim(s) needs to be amended if necessary to overcome any objection sets forth above.

Art Unit: 2631

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Pierce, US patent no. 5,515,300 discloses FFT element 560 and processing module 500.

Schwaller et al, US patent no. 6,230,026 discloses a channelizer 14 and a processing module 18.

Schwaller et al, US patent application publication no. US 2001/0046225 discloses a channelizer 14 and a processing module 18.

11. **Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314

(for informal or draft communications, please label "PROPOSED" or "DRAFT")

Art Unit: 2631

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive,
Arlington. VA., Sixth Floor (Receptionist).

12. Any inquiry concerning this communication or earlier communications from the
examiner should be directed to Jean B. Corrielus whose telephone number is (703) 305-4023.

The examiner can normally be reached on Monday-Thursday from 7:00 A.M. to 5:30 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's
supervisor, Chi Pham, can be reached on (703) 305-4378.

Any inquiry of a general nature or relating to the status of this application or
proceeding should be directed to the Group receptionist whose telephone number is (703) 305-
3800.

 3-18-03
Jean B. Corrielus

Primary Examiner

TC-2600